

## ABSTRACT

A pump apparatus that produces a pumping action for a gas or a liquid is produced in an extremely small and slim form and can be favorably used as a cooling pump apparatus for an electronic appliance or the like.

There is provided an electromagnetic pump where a plunger 10 including a magnetic body is provided so as to be capable of sliding inside a cylinder that is sealed at both end surfaces thereof by a pair of frames 20a, 20b with spaces between the plunger 10 and the end surfaces of the respective frames 20a, 20b as pump chambers 30a, 30b, air-core electromagnetic coils 50a, 50b are disposed around an outer circumference of the cylinder, and a fluid is conveyed by passing a current through the electromagnetic coils 50a, 50b to reciprocally move the plunger 10 in an axial direction of the cylinder, wherein intake valves 34a, 34b and outflow valves 36a, 36b that connect the pump chambers 30a, 30b and the outside are provided inside regions of the frames 20a, 20b at the end surfaces of the cylinder.